We claim:

1. A process for preparing a population of microcapsules having a substantially uniform size distribution comprising:

providing a membrane having a selected pore size,

providing a core material,

providing a receiving solution for receiving the core material, the receiving solution being a nonsolvent for the core material,

passing the core material under pressure through said membrane into the receiving solution to form uniform droplets of core material dispersed in the receiving solution,

adding wall-forming material to the receiving solution for coating the core material droplets,

polymerizing the coating on the core material droplets forming microcapsules.

2. The process according to claim 1 wherein the wall forming material is comprised of two reactive wall forming components, the first wall forming reactive component is dissolved in the core material, the second wall forming component is dissolved in the receiving solution.

3. The process according to claim 2 wherein the two reactive wall forming components comprise a diacid and a diol, a diester and a diol, a metal salt of dibasic acid and a dihalide, glycol ester and diacid, diacid chloride and diol, ethylene carbonate and diacid, anhydride and diol, diphenol and diacid, diacetate of diphenol and diacid, alkali metal salt of diphenol and a diacid halogen, a diamine and a dianhydride, a tetramine and a dianhydride.

4. The process according to claim 1 wherein the membrane is a porous inorganic or polymeric material.

5. The process according to claim 1 wherein the membrane is selected from glass, silicate, metal, metal silica compounds, metal silicate compounds, zeolites, alumina, titania, silica, ceramic, graphite, powdered steel and polymeric beads.

6. The process according to claim 5 wherein the pore size of the membrane is from 0.25 to 20 microns.

7. The process according to claim 1 wherein the core material is a hydrophobic material and solvent for a chromogenic material.

8. The process according to claim 1 wherein the core material comprises a chromogen and a solvent selected from a dialkyl phathalate, alkyl biphenyl, alkyl benzene, diaryl ether, di(aralkyl)ether, aryl aralkyl ether, alkyl ketone, alkyl benzoate, aralkyl benzoate, alkylated naphthalene, a partially hydrogenated terphenyl, a vegetable oil, and a vegetable oil ester.

9. The process according to claim 1 wherein the core material is a hydrophillic material.

10. The process according to claim 1 wherein the transdermal pressure applied to the core material is at least 20 KPa.

11. The process according to claim 1 wherein the wall-forming material comprises a material comprises a material selected from a gellable colloid, carboxy methyl cellulose, gelatin, gelatin-gum arabic, melamine formaldehyde, methylol melamine, urea formaldehyde, dimethylol urea, methylated dimethylol urea, methylated melamine formaldehyde, methylated methylol melamine, a gelatin-anionic polymer, alkylacrylate-acrylic acid copolymer, or reaction product with any of the foregoing.

12. The process according to claim 1 wherein the microcapsules have a broadness index of less than 1.0.

13. The process according to claim 1 wherein the microcapsules have a size distribution such that 80% of the population of microcapsules on a numerical basis are within two microns of the mean diameter.

14. The process according to claim 1 wherein the microcapsules have a size distribution such that 80% of the population of microcapsules on a numerical basis are within one micron of the mean diameter.

15. The process according to claim 1 wherein polymerizing the coating on the core material droplets to form microcapsules is accomplished by means of heating, pH change or addition of a polymerization reactant.

16. The microcapsules produced according to the process of claim 1.

17. A process for preparing a population of microcapsules having a substantially uniform size distribution useful for manufacture of carbonless paper comprising:

providing a membrane having a selected pore size,

providing a hydrophobic core material,

providing an aqueous solution for receiving the hydrophobic core material,

passing the hydrophobic core material under pressure through said membrane into the aqueous solution to form uniform droplets of hydrophobic core material dispersed in the aqueous solution,

adding wall-forming material to the aqueous solution to coat the core material droplets to form microcapsules,

heating the microcapsules to polymerize the wall material,

adjusting the pH to harden the wall material.

18. The process according to claim 17 wherein the wall forming material is comprised of two reactive wall forming components, the first wall forming reactive component is dissolved in the core material, the second wall forming component is dissolved in the receiving solution.

19. The process according to claim 18 wherein the two reactive wall forming components comprise a diacid and a diol, a diester and a diol, a metal salt of dibasic acid and a dihalide, glycol ester and diacid, diacid chloride and diol, ethylene carbonate and diacid, anhydride and diol, diphenol and diacid, diacetate of diphenol and diacid, alkali metal salt of diphenol and a diacid halogen, a diamine and a dianhydride, a tetramine and a dianhydride.

20. The process according to claim 17 wherein the membrane is a porous inorganic or polymeric material.

21. The process according to claim 17 wherein the membrane is selected from glass, silicate, metal, metal silica compounds, metal silicate compounds, zeolites, silica, ceramic, graphite, powdered steel and polymeric beads.

22. The process according to claim 17 wherein the pore size of the membrane is from 0.25 to 2.0 microns.

23. The process according to claim 17 wherein the core material is a hydrophobic material and solvent for a chromogenic material.

24. The process according to claim 17 wherein the core material comprises a chromogen and a solvent selected from a dialkyl phathalate, alkyl biphenyl, alkyl benzene, diaryl ether, di(aralkyl)ether, aryl aralkyl ether, alkyl ketone, alkyl benzoate, aralkyl benzoate, alkylated naphthalene, a partially hydrogenated terphenyl, a vegetable oil, and a vegetable oil ester.

25. The process according to claim 17 wherein the pressure applied to the core material is at least 20 KPa.

26. The process according to claim 17 wherein the wall-forming material comprises a material comprises a material selected from a gellable colloid, carboxy methyl cellulose, gelatin, gelatin-gum arabic, melamine formaldehyde, methylol melamine, urea formaldehyde, dimethylol urea, methylated dimethylol urea, methylated melamine formaldehyde, methylated methylol melamine, a gelatin-anionic polymer, alkylacrylate-acrylic acid copolymer, or reaction product with any of the foregoing.

27. The process according to claim 17 wherein the microcapsules have a broadness index of less than 1.0.

28. The process according to claim 17 wherein the microcapsules have a size distribution such that 80% of the population of microcapsules on a numerical basis are within two microns of the mean diameter.

29. The process according to claim 17 wherein the microcapsules have a size distribution such that 80% of the population of microcapsules on a numerical basis are within one micron of the mean diameter.

30. The microcapsules produced according to the process of claim 17.

31. A carbonless copy paper having a coating of microcapsules having a substantially uniform size distribution,

said microcapsules produced by providing a membrane having a selected pore size,

providing a hydrophobic core material comprising an oil and chromogenic material,

providing an aqueous solution for receiving the hydrophobic core material,

passing the hydrophobic core material under pressure through said membrane into the aqueous solution to form uniform droplets of hydrophobic core material dispersed in the aqueous solution

adding wall-forming material to the aqueous solution to coat the core material droplets with a wall material,

polymerizing the wall material to form microcapsules, then, coating the microcapsules onto a substrate.